

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>C62898PC</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP2004/008190</b>	International filing date (day/month/year) <b>22/07/2004</b>	(Earliest) Priority Date (day/month/year) <b>22/07/2003</b>
Applicant <b>CYTOS BIOTECHNOLOGY AG</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☒ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

**4. With regard to the title,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**CPG-PACKAGED LIPOSOMES**

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. With regards to the drawings,**

- a. the figure of the drawings to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☒ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2004/008190

## Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ in written format
- ☒ in computer readable form
- c. time of filing/furnishing
- ☒ contained in the international application as filed
- ☒ filed together with the international application in computer readable form
- ☐ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

International Application No  
PCT/EP2004/008190

According to International Patent Classification (IPC) or to both national classification and IPC

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBASE, CHEM ABS Data

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X W	US 2003/060440 A1 (VERTHELYI DANIELA ET AL) 27 March 2003 (2003-03-27) paragraph '0013! paragraph '0105! - paragraph '0113! paragraph '0116! paragraph '0138! paragraph '0140! paragraph '0154! - paragraph '0156!	1, 4-8, 13-22
X V Y	US 2003/087848 A1 (BRATZLER ROBERT L ET AL) 8 May 2003 (2003-05-08) table 1 paragraph '0147! paragraph '0147! - paragraph '0150! paragraph '0169! paragraph '0188!	1-11, 13-22 12

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Ref 26 cl  
disc. No.

☒ Patent family members are listed in annex.

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

23/11/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ✓ Y	US 2003/050268 A1 (BERG DANIEL J ET AL) 13 March 2003 (2003-03-13) table I paragraph '0158! - paragraph '0161! paragraph '0098! paragraph '0115! paragraph '0133! paragraph '0150! paragraph '0158! - paragraph '0161! paragraph '0044!	1-11, 13-22 12
X ✓ Y	WO 03/045431 A (SCHERING CORP) 5 June 2003 (2003-06-05) page 16; table 2; sequence 2 page 15, line 25 - line 31 claims 12,14 page 17, line 26 - line 28	1-11, 13-22 12
X ✓ Y	WO 03/030656 A (BABIUK LORNE ALAN ; POTTER ANDREW ALLAN (CA); UNIV SASKATCHEWAN (CA);) 17 April 2003 (2003-04-17) page 4, line 3 - line 8 page 33, line 30 - page 34, line 6 page 37, line 4 - line 10 page 23, line 22 - line 27 page 7, line 16 - line 19 page 16, line 29 - line 31 page 17, line 21 - line 24 page 33, line 30 - page 34, line 1 page 37, line 4 - line 7 page 22, line 9 - line 12 page 18, line 11 - line 25	1-11, 13-22 12
P,X ✓ Y ✓	WO 2004/000351 A (RENNER WOLFGANG A ; BACHMAN MARTIN F (CH); CYTOS BIOTECHNOLOGY AG (CH)) 31 December 2003 (2003-12-31) page 53 - page 55 WO 03/024481 A (BACHMANN MARTIN F ; LIPOWSKY GERAD (CH); MAURER PATRICK (CH); MEIJERIN) 27 March 2003 (2003-03-27) page 110; table I	1-22 12
A ✓	KRUG A ET AL: "Identification of CpG oligonucleotide sequences with high induction of IFN-alpha/beta in plasmacytoid dendritic cells" EUROPEAN JOURNAL OF IMMUNOLOGY, WEINHEIM, DE, vol. 31, no. 7, July 2001 (2001-07), pages 2154-2163, XP002292085 ISSN: 0014-2980 the whole document	1-22

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## INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓✓	<p>KRUG ANNE ET AL: "CpG-A oligonucleotides induce a monocyte-derived dendritic cell-like phenotype that preferentially activates CD8 T cells."  JOURNAL OF IMMUNOLOGY,  vol. 170, no. 7,  1 April 2003 (2003-04-01), pages  3468-3477, XP002303132  ISSN: 0022-1767  the whole document</p>	1-22
A ✓✓	<p>BLACKWELL SUE E ET AL: "CpG-A-induced monocyte IFN-gamma-inducible protein-10 production is regulated by plasmacytoid dendritic cell-derived IFN-alpha."  JOURNAL OF IMMUNOLOGY,  vol. 170, no. 8,  15 April 2003 (2003-04-15), pages  4061-4068, XP002303133  ISSN: 0022-1767  the whole document</p>	1-22
A W	<p>KERKMANN MIREN ET AL: "Activation with CpG-A and CpG-B oligonucleotides reveals two distinct regulatory pathways of type I IFN synthesis in human plasmacytoid dendritic cells."  JOURNAL OF IMMUNOLOGY,  vol. 170, no. 9, 1 May 2003 (2003-05-01),  pages 4465-4474, XP002303134  ISSN: 0022-1767  the whole document</p>	1-22
A W	<p>WO 03/040308 A (ISHII KEN J ; KAWAKAMI KOJI (US); US GOVERNMENT (US); GURSEL IHSAN (US) 15 May 2003 (2003-05-15)  cited in the application  the whole document</p>	1-22
A ✓✓	<p>GURSEL I ET AL: "Sterically stabilized cationic liposomes improve the uptake and immunostimulatory activity of CpG oligonucleotides"  JOURNAL OF IMMUNOLOGY, THE WILLIAMS AND WILKINS CO. BALTIMORE, US,  vol. 167, no. 6,  15 September 2001 (2001-09-15), pages  3324-3328, XP002228991  ISSN: 0022-1767  the whole document</p>	1-22

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2004/008190

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 15-17, 20-21  
because they relate to subject matter not required to be searched by this Authority, namely:  
Although claims 15-17 and 20-21 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/008190

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003060440	A1	27-03-2003	AU 4343700 A EP 1176966 A2 WO 0061151 A2	14-11-2000 06-02-2002 19-10-2000
US 2003087848	A1	08-05-2003	NONE	
US 2003050268	A1	13-03-2003	NONE	
WO 03045431	A	05-06-2003	CA 2468320 A1 EP 1450858 A2 WO 03045431 A2 US 2003138413 A1	05-06-2003 01-09-2004 05-06-2003 24-07-2003
WO 03030656	A	17-04-2003	WO 03030656 A2 EP 1455593 A2	17-04-2003 15-09-2004
WO 2004000351	A	31-12-2003	WO 2004000351 A1 US 2004005338 A1	31-12-2003 08-01-2004
WO 03024481	A	27-03-2003	EP 1450856 A2 WO 03024481 A2 US 2003099668 A1	01-09-2004 27-03-2003 29-05-2003
WO 03040308	A	15-05-2003	WO 03040308 A2	15-05-2003